



21105\_001102\_sequence.txt

SEQUENCE LISTING

<110> PETER S.N. ROWE

<120> REGULATION OF TISSUE MINERALIZATION AND  
PHOSPHATE METABOLISM BY ASARM PEPTIDES

<130> 21105.001102

<140> 10/567,938

<141> 2006-07-13

<150> PCT/US04/30530

<151> 2003-09-19

<160> 17

<170> FastSEQ for windows Version 4.0

<210> 1

<211> 20

<212> PRT

<213> Artificial Sequence

<400> 1

Pro Arg Asp Asp Ser Ser Glu Ser Ser Asp Ser Gly Ser Ser Ser Glu  
1 5 10 15  
Ser Asp Gly Asp  
20

<210> 2

<211> 18

<212> PRT

<213> Artificial Sequence

<400> 2

Arg Asp Ser Ser Glu Ser Ser Ser Ser Gly Ser Ser Ser Glu Ser His  
1 5 10 15  
Gly Asp

<210> 3

<211> 18

<212> PRT

<213> Artificial Sequence

<400> 3

Arg Asp Ser Ser Glu Ser Ser Ser Ser Gly Ser Ser Ser Glu Ser Ser  
1 5 10 15  
Gly Asp

<210> 4

<211> 19

<212> PRT

<213> Artificial Sequence

<400> 4

21105\_001102\_sequence.txt

Arg Glu Asp Ser Ser Glu Ser Ser Asp Ser Gly Ser Ser Ser Glu Ser  
1 5 10 15  
Asp Gly Asp

<210> 5  
<211> 44  
<212> PRT  
<213> Artificial Sequence

<400> 5  
Asn Lys Gly Met Pro Gln Gly Lys Gly Ser Trp Gly Arg Gln Pro His  
1 5 10 15  
Ser Asn Arg Arg Phe Ser Ser Arg Arg Asp Asp Ser Ser Glu Ser  
20 25 30  
Ser Asp Ser Gly Ser Ser Ser Glu Ser Asp Gly Asp  
35 40

<210> 6  
<211> 44  
<212> PRT  
<213> Artificial Sequence

<400> 6  
Asn Lys Gly Met Ser Gln Arg Arg Gly Ser Trp Pro Ser Arg Arg Pro  
1 5 10 15  
Asn Ser His Arg Arg Ala Ser Thr Arg Gln Arg Asp Ser Ser Glu Ser  
20 25 30  
Ser Ser Ser Gly Ser Ser Ser Glu Ser His Gly Asp  
35 40

<210> 7  
<211> 44  
<212> PRT  
<213> Artificial Sequence

<400> 7  
Asn Arg Gly Met Ser Gln Arg Arg Gly Ser Trp Ala Ser Arg Arg Pro  
1 5 10 15  
His Pro His Arg Arg Val Ser Thr Arg Gln Arg Asp Ser Ser Glu Ser  
20 25 30  
Ser Ser Ser Gly Ser Ser Ser Glu Ser Ser Gly Asp  
35 40

<210> 8  
<211> 39  
<212> PRT  
<213> Artificial Sequence

<400> 8  
Ser Gln Ser Glu Glu Ser His Ser Glu Glu Asp Asp Ser Asp Ser Gln  
1 5 10 15  
Asp Ser Ser Arg Ser Lys Glu Asp Ser Asn Ser Thr Glu Ser Lys Ser  
20 25 30  
Ser Ser Glu Glu Asp Gly Gln  
35

<210> 9

21105\_001102\_sequence.txt

<211> 40

<212> PRT

<213> Artifical Sequence

<400> 9

Pro Gln Gly Lys Gly Ser Trp Gly Arg Gln Pro His Ser Asn Arg Arg  
 1 5 10 15  
 Phe Ser Ser Lys Arg Arg Asp Asp Ser Ser Glu Ser Ser Asp Ser Gly  
 20 25 30  
 Ser Ser Ser Glu Ser Asp Gly Asp  
 35 40

<210> 10

<211> 41

<212> PRT

<213> Artifical Sequence

<400> 10

Ser Gln Arg Arg Gly Ser Trp Pro Ser Arg Arg Pro Asn Ser His Arg  
 1 5 10 15  
 Arg Ala Ser Thr Arg Arg Gln Arg Asp Ser Ser Glu Ser Ser Ser Ser  
 20 25 30  
 Gly Ser Ser Ser Glu Ser His Gly Asp  
 35 40

<210> 11

<211> 40

<212> PRT

<213> Artifical Sequence

<400> 11

Ser Gln Arg Arg Gly Ser Trp Ala Ser Arg Arg Pro His Pro His Arg  
 1 5 10 15  
 Arg Val Ser Thr Arg Gln Arg Asp Ser Ser Glu Ser Ser Ser Ser Gly  
 20 25 30  
 Ser Ser Ser Glu Ser Ser Gly Asp  
 35 40

<210> 12

<211> 36

<212> PRT

<213> Artifical Sequence

<400> 12

Met Lys Phe Leu Val Phe Ala Phe Ile Leu Ala Leu Met Val Ser Met  
 1 5 10 15  
 Ile Gly Ala Asp Ser Ser Glu Glu Lys Phe Leu Arg Arg Ile Gly Arg  
 20 25 30  
 Phe Gly Tyr Gly  
 35

<210> 13

<211> 180

<212> PRT

<213> Artifical Sequence

<400> 13

Gln Thr Gly Phe Ala Gly Pro Ser Glu Ala Glu Ser Thr His Leu Asp  
 1 5 10 15

21105\_001102\_sequence.txt

Thr Lys Lys Pro Gly Tyr Asn Glu Ile Pro Glu Arg Glu Glu Asn Gly  
 20 25 30  
 Gly Asn Thr Ile Gly Thr Arg Asp Glu Thr Ala Lys Phe Ala Asp Ala  
 35 40 45  
 Val Asp Val Ser Leu Val Glu Gly Ser Asn Asp Ile Met Gly Ser Thr  
 50 55 60  
 Asn Phe Lys Glu Leu Pro Gly Arg Glu Gly Asn Arg Val Asp Ala Gly  
 65 70 75 80  
 Ser Gln Asn Ala His Gln Gly Lys Val Glu Glu His Tyr Pro Pro Ala  
 85 90 95  
 Pro Ser Lys Glu Lys Arg Lys Glu Gly Ser Ser Asp Ala Ala Glu Ser  
 100 105 110  
 Thr Asn Tyr Asn Glu Ile Pro Lys Asn Gly Lys Gly Ser Thr Arg Lys  
 115 120 125  
 Gly Val Asp His Ser Asn Arg Asn Gln Ala Thr Leu Asn Glu Lys Gln  
 130 135 140  
 Arg Phe Pro Ser Lys Gly Lys Ser Gln Gly Leu Pro Ile Pro Ser Arg  
 145 150 155 160  
 Gly Leu Asp Asn Glu Ile Lys Asn Leu Met Asp Ser Phe Asn Gly Pro  
 165 170 175  
 Ser His Glu Asn  
 180

<210> 14  
 <211> 180  
 <212> PRT  
 <213> Artificial Sequence

<400> 14  
 Gln Thr Gly Phe Ala Gly Pro Ser Glu Ala Glu Ser Thr Asn Leu Asp  
 1 5 10 15  
 Ile Lys Phe Pro Gly Tyr Asn Phe Ile Pro Phe Arg Lys Phe Asn Gly  
 20 25 30  
 Gly Asn Thr Ile Gly Thr Gly Asp Glu Thr Ala Lys Ile Phe Ala Asp  
 35 40 45  
 Ala Val Asp Val Ser Leu Val Glu Gly Asn Asn Asp Ile Met Gly Ser  
 50 55 60  
 Thr Asn Phe Lys Glu Leu Pro Gly Arg Glu Gly Asn Arg Val Asp Val  
 65 70 75 80  
 Gly Gly Gln Asn Ala His Gln Gly Lys Val Glu Phe His Tyr Pro Pro  
 85 90 95  
 Ala Pro Ser Lys Glu Lys Arg Lys Glu Gly Ser Ser Asp Ala Thr Glu  
 100 105 110  
 Ser Thr Asn Tyr Asn Glu Ile Pro Lys Asn Asp Lys Gly Ser Ala Arg  
 115 120 125  
 Lys Gly Val Asp Asp Ser Asn Arg Asn Gln Ala Ile Leu His Glu Lys  
 130 135 140  
 Gln Arg Phe Pro Ser Lys Gly Lys Ser Gln Gly Leu Pro Ile Pro Ser  
 145 150 155 160  
 Arg Gly Leu Asp Asn Glu Ile Lys Thr Glu Met Asp Ser Leu Asn Gly  
 165 170 175  
 Pro Ser Asn Glu  
 180

<210> 15  
 <211> 169  
 <212> PRT  
 <213> Artificial Sequence

<400> 15  
 Arg Pro Leu Ser Gly Ser Ser Lys Ala Glu Val Ile Asp Pro His Met

21105\_001102\_sequence.txt

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1      5      10      15
Ser Gly Leu Gly Ser Asn Glu Ile Pro Gly Arg Glu Gly His Gly Gly
20      25      30
Ser Ala Tyr Ala Thr Arg Asp Lys Ala Ala Gln Gly Ala Gly Ser Ala
35      40      45
Gly Gly Ser Leu Val Gly Gly Ser Asn Glu Ile Ile Gly Ser Thr Asn
50      55      60
Phe Arg Glu Leu Pro Gly Lys Glu Gly Asn Arg Ile Asn Ala Gly Ser
65      70      75      80
Gln Asn Ala His Gln Gly Lys Val Glu Phe His Tyr Pro Gln Val Ala
85      90      95
Ser Arg Glu Lys Val Lys Gly Gly Val Glu His Ala Gly Arg Ala Gly
100      105      110
Tyr Asn Glu Ile Pro Lys Ser Ser Lys Gly Ser Ser Ser Lys Asp Ala
115      120      125
Glu Glu Ser Lys Gly Asn Gln Leu Thr Leu Thr Ala Ser Gln Arg Phe
130      135      140
Pro Gly Lys Gly Lys Ser Gln Gly Pro Ala Leu Pro Ser His Ser Leu
145      150      155      160
Ser Asn Glu Val Lys Ser Glu Glu Asn
165

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<210> 16  
 <211> 169  
 <212> PRT  
 <213> Artifical Sequence

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<400> 16
Arg Pro Leu Ser Gly Ser Ser Lys Ala Glu Val Ile Asp Pro His Met
1      5      10      15
Ser Gly Leu Gly Ser Asn Glu Ile Pro Gly Arg Glu Gly His Gly Gly
20      25      30
Ser Ala Tyr Ala Thr Arg Asp Lys Ala Ala Gln Gly Ala Gly Ser Ala
35      40      45
Gly Gly Ser Leu Val Gly Gly Ser Asn Glu Ile Ile Gly Ser Thr Asn
50      55      60
Phe Arg Glu Leu Pro Gly Lys Glu Gly Asn Arg Ile Asn Ala Gly Ser
65      70      75      80
Gln Asn Ala His Gln Gly Lys Val Glu Phe His Tyr Pro Gln Val Ala
85      90      95
Ser Arg Glu Lys Val Lys Gly Gly Val Glu His Ala Gly Arg Ala Gly
100      105      110
Tyr Asn Glu Ile Pro Lys Ser Ser Lys Gly Ser Ser Ser Lys Asp Ala
115      120      125
Glu Glu Ser Lys Gly Asn Gln Leu Thr Leu Thr Ala Ser Gln Arg Phe
130      135      140
Pro Gly Lys Gly Lys Ser Gln Gly Pro Ala Leu Pro Ser His Ser Leu
145      150      155      160
Ser Asn Glu Val Lys Ser Glu Glu Asn
165

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<210> 17  
 <211> 179  
 <212> PRT  
 <213> Artifical Sequence

<220>  
 <223> Description of Artificial Sequence: Note =  
 Synthetic Construct

<220>

## 21105\_001102\_sequence.txt

&lt;221&gt; VARIANT

&lt;222&gt; 61, 421, 901, 1021 1381

&lt;223&gt; Xaa = Any Amino Acid

&lt;400&gt; 17

Xaa	Xaa	Gly	Xaa	Xaa	Gly	Xaa	Ser	Xaa	Ala	Glu	Xaa	Xaa	Xaa	Xaa	Xaa
1				5					10					15	
Ile	Xaa	Xaa	Xaa	Gly	Xaa	Asn	Glu	Ile	Pro	Xaa	Arg	Glu	Xaa	Xaa	Gly
			20					25					30		
Gly	Xaa	Xaa	Xaa	Xaa	Thr	Arg	Asp	Xaa	Thr	Ala	Xaa	Xaa	Ala	Xaa	Xaa
		35					40					45			
Xaa	Val	Ser	Leu	Val	Glu	Gly	Xaa	Asn	Xaa	Ile	Xaa	Gly	Ser	Ile	Asn
	50					55					60				
Phe	Xaa	Leu	Leu	Pro	Gly	Xaa	Glu	Gly	Asn	Arg	Val	Asp	Asp	Gly	Ser
65					70					75					80
Gln	Asn	Ala	His	Gln	Gly	Lys	Val	Phe	Phe	His	Tyr	Pro	Xaa	Ala	Pro
			85						90					95	
Ser	Lys	Glu	Lys	Xaa	Lys	Xaa	Gly	Ser	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa
			100					105						110	
Xaa	Tyr	Asn	Glu	Ile	Pro	Lys	Xaa	Xaa	Lys	Gly	Ser	Xaa	Xaa	Lys	Xaa
		115					120					125			
Xaa	Xaa	Xaa	Ser	Xaa	Xaa	Asn	Gln	Xaa	Thr	Leu	Xaa	Glu	Xaa	Gln	Arg
		130				135					140				
Phe	Pro	Xaa	Lys	Gly	Lys	Ser	Gln	Gly	Ile	Pro	Ile	Pro	Ser	Xaa	Xaa
145					150					155					160
Leu	Xaa	Asn	Glu	Xaa	Lys	Xaa	Glu	Xaa	Asp	Ser	Xaa	Asn	Gly	Pro	Ser
				165					170					175	
Xaa	Glu	Asn													